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CONTENTS

| | |
|---|-----|
| Guest editorial | 245 |
| Murdoch - The biology of the lilac leaf miner, <i>Gracillaria syringella</i> Fabr. (Lepidoptera : Gracillariidae) | 247 |
| Buerger - Sense organs of the labra of some blood-feeding Diptera. | 283 |
| Book review | 291 |

Guest Editorial - The Religious Faith of the Scientist

In the course of lectures given by J. E. McTaggart of Trinity College, Cambridge, some forty-five years ago, as an 'Introduction to the Study of Philosophy', we were told that 'Science is common-sense systematized'. Perhaps that sounds reasonable enough, but one must realize that for the philosopher 'common-sense' is almost a dirty word. The trouble started with the Greeks, who laid the foundations of philosophic thought. The Greeks discovered geometry and were so fascinated by the results that could be got in that study by methodical reasoning that they developed an unbounded faith in the power of human reason, and became convinced that logical thought could explain all things. Plato was not alone in using logic to discredit common-sense - a device that is part of the stock in trade of philosophers to this day.

Later, in western Europe throughout the middle ages, logical disputation, developed as a fine art, became the pathway to academic distinction. And when Galileo and his followers refused to play the game according to the rules and rebelled against this servitude to reason, refused to argue, and based their conclusions on simple experiments with limited objectives - it was exceedingly provoking for the scholastics of that time.

Galileo and his successors won the day, and scholasticism became discredited, only because the new experimental methods and measurements gave results which all the argumentation and classifications of the preceding two thousand years had failed to give. We are still living at the height of this Renaissance revolt against reason, which is the special character of our scientific age.

The objective in the middle ages had been the all-embracing synthesis that would embody all knowledge and all truth. The new method, the method of science, was to abandon the exaggerated belief in the powers of reason, and to abandon the attempt to reach ultimate truth; but just to study by observation and experiment certain limited aspects of the phenomena around us. Our scientific conception of the universe is unbelievable for the philosopher. It is made up of abstractions - and there is no denying that many of us get into the habit of mistaking these abstrac-

tions for concrete realities. Whitehead has underlined the confusion that has arisen from ascribing 'misplaced concreteness' to the scientific scheme of things. 'Thought', he writes, 'is abstract, and the excessive use of abstractions can be a major vice of the intellect'. But the world of science has always remained perfectly satisfied with its peculiar abstractions. They work, and that is sufficient for it.

Religion was defined by Whitehead as 'the vision of something which stands beyond, behind, and within, the passing flux of immediate things'. The belief of the scientist in natural laws is not so very different from that; and that is his basic *faith*. The philosopher has no use for faith; that is why he speaks a totally different language from the scientist - whose entire system of thought is based on faith. It is curious to note how long it took for philosophers to recognize this obvious fact. It seems to have been first clearly pointed out by David Hume (1711-1776) who wrote of science: "Our holy religion is founded on faith" - a simple faith that is in the order of nature.

We are all familiar with the small boy's definition of faith as "believin' wot yer know ain't true!" That certainly applies to the scientific faith. For the laws of science, which are the immediate objects of our faith, are not regarded as forever true. They are temporary, provisional or partial truths. For two and a half centuries we had accepted Newton's theory of gravitation. In our day it has been shown by Einstein that this theory is not true when applied to the universe as a whole - but it remains a partial truth, convenient for everyday use within the solar system.

According to the teachings of logic a proposition must be either true or false; there is no middle term. That is not accepted by the scientist: he works continually with propositions whose truth is subject to all kinds of limitations and qualifications - many of them not yet defined. Which came nearest to the scientific truth, Galileo or the authorities of the Inquisition?

Science started with the organization of ordinary experiences; these events were conceived as the outcome of general principles that reign throughout the natural order. These general principles or laws of causation were arrived at by a process of induction from the observation of *particular* cases. But knowledge of *general* truths cannot be derived from the data of sense. By pointing this out philosophers claim to have refuted the beliefs of the empiricists. The scientist, however, is impervious to this refutation - because, for the purpose of his science, he believes by faith in the existence of general truths. The theory of causation is the despair of philosophy - and yet all our activities, in science and in daily life, are based upon it.

How far will this scientific faith get us? We do not know; but it is probably true to say that it will take us much further than we think; and that the power of science has been grossly underestimated by the scientists of the past. Karl Pearson in the first edition of *The Grammar of Science* (1892) asserts that to 'draw a distinction between the scientific and philosophical fields is obscurantism'. That assertion was premature. Science, however, is founded on faith and lives by faith. Without a deeply rooted instinctive belief in the existence of laws which reign throughout